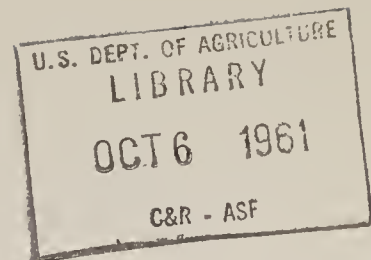


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UNITED STATES DEPARTMENT OF AGRICULTURE
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Telephone Engineering Newsletter

Newsletters are intended to provide a means of answering questions that arise frequently in the field and to advise the field of new developments. They are not intended to be instructions nor to replace in any respect the presently approved channels for establishing requirements and procedures.

TE & CM Sections now being printed:

New	141	Fire Alarm Systems
Add.	220	Traffic Agreements
New	225	1956 Bell System Traffic Agreement
Add.	310	Heating, Ventilating and Humidity Control
Rev.	319	Interoffice Trunking and Signaling
New	326	Application Guide, Preparation of Equipment Specifications, Toll Office Equipment Requirements
Add.	422	Subscriber Loop Transmission Calculations
Add.	635	Construction of Aerial Cable Plant
Rev.	620	Open Wire Circuit Protection

Field Trial of Mytigap Protectors

Mytigap protectors manufactured by the Cook Electric Company and installed in cable terminals for field trial at Dobson, North Carolina, were removed after about one month of use. Lightning caused many of the Mytigaps to weld closed. Pending the results of further investigations, Mytigaps should not be used.

Leich Electric Company TPS Switchboards

Approval has been given the Leich Sales Corporation to bid on REA projects for TPS central office equipment, provided the REA borrower agrees in writing to accept it if it is the low bid. After an installation has been made, full approval will be given if inspection and acceptance tests indicate the equipment meets all of the REA requirements.

Small Usage of Short Poles

In 1956, of the poles used, nearly 50% were 25 ft., 31% were 20 ft., 2.4% were 22 ft., and 1.2% were 16 ft. These figures lead to a question.

Is the most economical pole being used, since in the average system 64% of open wire plant is two wire?

Dial Mobile Radio, Amherst, Virginia

The Motorola dial mobile radio developed for REA was installed for field trial at Amherst, Virginia, late in May, and has operated successfully to date. It includes a base station, a rural subscriber (fixed) station 30 airline miles distant and two mobile units in telephone company cars. The equipment is owned by REA and was installed for field trial. The Central Virginia Telephone Company owns the 100 ft. tower at the base station. The rural subscriber antenna is mounted on a 25 ft. telephone pole. This company operates the Amherst exchange and two other nearby exchanges. The equipment permits telephone connections from the mobile units when anywhere in the operating area of the telephone company. Outward calls are dialed from the mobile units and incoming calls are received by bell signal in the mobile units. The dialing is done with push buttons. A lamp signal lights in each mobile unit when the channel is in use by another station in the system. Each unit has provision for breaking in on a busy in case of emergency. The rural subscriber station operates similarly.

Stromberg-Carlson Transistorized Subscriber Carrier

A field trial installation of S-C subscriber line carrier which is all-transistorized is under way, at Montpelier, Virginia. This is five-channel amplitude modulated equipment. Two channels will be individual trunks to a PBX. Another channel will be an individual line and two channels will be party lines. Montpelier is a central office of the Merchants and Farmers Telephone Company. Results will be of particular interest as this is a high lightning incidence area and where static noise conditions may prove troublesome.

Field Trial of M-M-M Cable Conductor Splice

The Minnesota Mining and Manufacturing Company has developed a new sleeve for splicing cable conductors. The method was demonstrated recently for the Clay County Rural Telephone Cooperative, Inc., Mt. Meridian, Indiana, project Indiana 524. The sleeves are applied by a hand tool and make water-proof solderless connections of the cable conductors. The tool punctures the insulation on the conductors, makes the connection, insulates and seals it, all in one operation. A tank of compressed nitrogen is required to supply pressure to the hand tool. Splicing can be performed quite rapidly using this method.

Telephone Technicians' Field Activities

Four REA telephone technicians established their headquarters in the field on May 1. So far, most of their time has been devoted to COE acceptance tests and COE T.O. & M. work. They are concentrating on the use of test equipment and the establishment and use of plant operating records for

efficient trouble shooting work as assistance to REA borrowers. Indications are that there is a tremendous job to be done along these lines.

Decline in Joint Use

A decline in the amount of joint use is apparent in recent months. In the first six months of 1956 the joint use pole mileage was about 25 percent of the total mileage. In the first six months of 1957, the joint mileage declined to about 15 percent.

One Bare, One Polyethylene Covered Line Circuits

Two hundred-sixty-five miles of 109-190 steel wire circuits having one wire of each circuit polyethylene insulated went into service about June 1 on the system of the Haviland Telephone Company (Kansas 506). The spans average 500 feet, with 530 feet as the maximum and 470 as minimum. The insulated wire is the battery side of the circuits in multi-circuit leads. In single circuit leads they used half of the circuit with the insulated wire carrying the battery and with the bare wire carrying the battery in the other half of the circuit.

The Sunflower Telephone Company (Kansas 527) is using 350 miles of the same type insulated wire in its system which will go into service before Labor Day.

Buried Plant Field Trial

The Northeast Missouri Rural Telephone Company is proceeding with an installation of about 60 miles of buried cable and 190 miles of buried wire. The cable and wire are being supplied under specifications developed by REA. The cable will be polyethylene insulated copper conductor type with a tube of polyethylene over the core, a copper shield 5 mils thick over this and an outer sheath of polyethylene. Some of the cable will be 19 gauge, some 22 gauge and some 24 gauge. The wire will comprise two 19 gauge copper conductors in parallel, insulated by a single extrusion of polyethylene. A steel tape armor will be applied over the polyethylene and this will be covered with an outer jacket of polyvinyl chloride. The construction is expected to begin about October 1 and be completed before the end of the year.

R. W. Lynn

